

Prospective exotic searches with the NOvA detectors

The “NuMI Off-Axis electron-neutrino Appearance” (NOvA) is a long-baseline, neutrino oscillation, experiment. It is currently under construction and managed by Fermilab. It is sensitive to the mass hierarchy the θ_{23} octant ambiguity, and it has the potential to observe CP violation at the lepton sector. Besides these primary physics goals, a number of exotic or generally “non-(neutrino)-oscillation” searches can be done with the NOvA detectors. There is a large (14-kton) Far-detector made of active scintillator which could observe supernova events, or monopoles and light dark matter passing through. There is also a similar Near-detector (222 ton, 900 m from the NuMI target) that can search for beam-generated exotic-particles. Along with the 700 kW beam-upgrade and the 10^{21} integral-POT planned within the Intensity Frontier, it can have a substantial chance to observe exiting new physics states from hidden sectors and other particles coupling very-weakly to normal matter.